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CR-130780

DYNAMICS OF PLANKTON POPULATIONS  
IN UPWELLING AREAS

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(E73-10325) DYNAMICS OF PLANKTON  
POPULATIONS IN UPWELLING AREAS (Delaware  
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The analysis of ERTS - I frames was continued for an interpretation of plankton blooms in the upwelling areas along the Arabian Coast, the Somali Coast and the Northwest Coast of Africa. For a workshop (see attached sheets) priority was given to the NW Coast of Africa. All frames from channel 7 (0.8 - 1.1mm) were composed to have a detailed description of our testsite. As a result, we could determine the strength and direction of dust transported to the near coastal areas. All frames obtained during the period August through November are listed in the following table. The major transport was located South of Dakar. Although the area is rich in fishery it is documented that the quality of the catches is poor. We speculate that the constant atmospheric fallout of eolian dust affects the chemistry of this water and changes the uptake kinetics of nutrients by phytoplankton cells. Nothing is known about the mechanism involving the presence of inorganic particles in the inner part of single cells. The recent ground truth program along the NW Coast of Africa consists of measurements of chlorophyll, dust particles, pH and temperature.

Data from the ground truth program with R.V. "Discover", are now reduced and will be analyzed together with the data obtained with R.V. "Cornide de Saavedra" and R.V. "Jean Charcot". The attached chart shows the location of the stations covered by R.V. "Discovery".

The work planned for the next reporting period will include the analysis of digitized data and their comparison with ship data. Selected orbits with cloudfree conditions and visible plankton blooms will be color-enhanced within the next four weeks.

<u>DATE</u>	<u>ERTS-1 IDENTIFICATION NUMBER</u>
9 Aug. 72	1017-11052
9 Aug. 72	1017-11055
9 Aug. 72	1017-11061
9 Aug. 72	1017-11061
10 Aug. 72	1018-11113
23 Aug. 72	1031-10410
25 Aug. 72	1033-10515
25 Aug. 72	1033-10524
25 Aug. 72	1033-10533
25 Aug. 72	1033-10543
25 Aug. 72	1033-10545
28 Aug. 72	1036-11114
28 Sept. 72	1067-10411
28 Sept. 72	1067-10432
28 Sept. 72	1067-10434
28 Sept. 72	1067-10441
29 Sept. 72	1068-10463
29 Sept. 72	1068-10470
29 Sept. 72	1068-10472
29 Sept. 72	1068-10475
29 Sept. 72	1068-10481
29 Sept. 72	1068-10484
29 Sept. 72	1068-10490
29 Sept. 72	1068-10493
29 Sept. 72	1068-10495
30 Sept. 72	1069-10560
3 Nov. 72	1103-10411
3 Nov. 72	1103-10413
3 Nov. 72	1103-10420
3 Nov. 72	1103-10422
3 Nov. 72	1103-10425
3 Nov. 72	1103-10431
3 Nov. 72	1103-10434
3 Nov. 72	1103-10452
4 Nov. 72	1104-10463
4 Nov. 72	1104-10472
4 Nov. 72	1104-10504
4 Nov. 72	1104-10510
4 Nov. 72	1104-10513
4 Nov. 72	1104-10515
4 Nov. 72	1104-10522
5 Nov. 72	1105-10535
5 Nov. 72	1105-10560
5 Nov. 72	1105-10565
5 Nov. 72	1105-10571
5 Nov. 72	1105-10574
5 Nov. 72	1105-10580
6 Nov. 72	1106-10591
6 Nov. 72	1106-10594
6 Nov. 72	1106-11000
6 Nov. 72	1106-11003
6 Nov. 72	1106-11005
6 Nov. 72	1106-11012
6 Nov. 72	1106-11014
6 Nov. 72	1106-11021
6 Nov. 72	1106-11023
6 Nov. 72	1106-11030

19°W

18°

17°

16°

15°

14°W

27°N

26°

25°

24°

23°

22°

21°N

7970.

Area of  
Fig 2 & 3

7980.

7979

Cabo  
Bojador

7984

7990.

7994

Durnford Point

8000.

Cabo Barbas

8016  
8020

8010.

8015

Cap Blanc

WORK SHOP

Clayton Hall - Jan. 3 & 4, 1973

Chairman - Dr. Karl-Heinz Szekielda, University of Delaware,  
College of Marine Studies

Jan. 3

- 9:00 a.m. Registration and issuing of name tags
- 9:25 Welcome by Dr. William S. Gaither, Dean, College of Marine Studies
- 9:30-11:55 Background Information Sessions
- 9:30 Necessity for Spacecraft Oceanography for Fisheries -  
Dr. James Bailey, Geography Program, Office of Naval Research
- 10:00 Combined Effects of Chlorophyll and Yellow Materials in High Altitude Imagery - Prof. Charles S. Yentsch, University of Massachusetts, Marine Station
- 10:20 Phytoplankton - Structure and Spectral Properties -  
Dr. Karl-Heinz Szekielda, University of Delaware, College of Marine Studies
- 10:40 Remote Detection of Chlorophyll in the Oceans -  
Dr. Gifford Ewing, Woods Hole Oceanographic Institution
- 11:10 Coffee Break
- 11:25 Atmospheric Transfer Model for Estimating Chlorophyll Concentrations from Space - Dr. Robert Curran, NASA, Goddard Space Flight Center
- 11:55-12:35 Ground Truth Sessions
- 11:55 Gulf of Maine - Dr. Charles S. Yentsch
- 12:10 East Coast of U.S.A. - Dr. Stuart Kupferman and Dr. Karl-Heinz Szekielda, University of Delaware, College of Marine Studies
- 12:25 Northwest Coast of Africa - Dr. Karl-Heinz Szekielda
- 12:40- 1:30 Lunch at Clayton Hall

1:30- 4:15      The Eastern North Atlantic from Space

1:30      Large Scale Mapping of Sea Surface Temperatures from Space -  
                  Mr. William Shenk and Dr. V. V. Salomonson, Goddard Space  
                  Flight Center

2:00      Short-time Fluctuations in Temperatures - Dr. Szekielda

2:15      Real Time Analysis of Temperature Patterns - Mr. Paul  
                  LaViolette, Spacecraft Oceanography Group, NESS/NOAA

2:30      Chlorophyll Distribution in the CINECA Upwelling Region, as  
                  obtained with ERTS-1 - Dr. Curran and Dr. Szekielda

3:00- 3:15      Coffee Break

3:15      The Northwest Coast of Africa as viewed from NOAA-1-  
                  Mr. LaViolette

3:30      The Influence of Eolian Dust on the Marine Ecosystem -  
                  Mr. Frederick Lepple, University of Delaware, College of  
                  Marine Studies

3:45      Distribution of Plankton and Its Relations to Tuna Catches -  
                  Prof. Charles S. Yentsch

4:15      Announcements and Adjournment

Jan. 4

9:00 a.m.      Participants convene at Clayton Hall

9:00-11:00      Discussions

11:00      Coffee Break

11:15-12:30      Discussions

12:30 approx.      Adjournment

12:45      Steering Committee Luncheon - Clayton Hall